425/517

1895

A.D. 1894. Aug. 28. N° 16,399.*

MANVILLE & *another's* AMENDED SPECIFICATION.

(1 SHEET)

~~425/101~~

FIG. 1

FIG 2

FIG 3

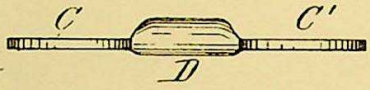


FIG 4

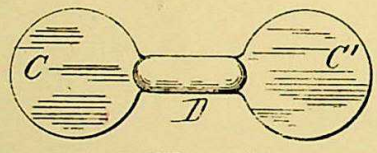


FIG 5

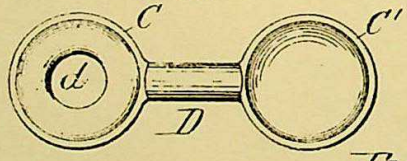


FIG 6

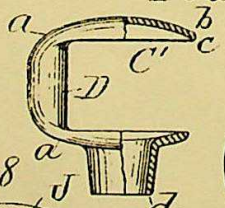


FIG. 7

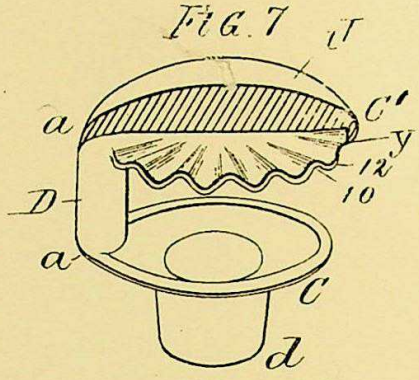


FIG. 12

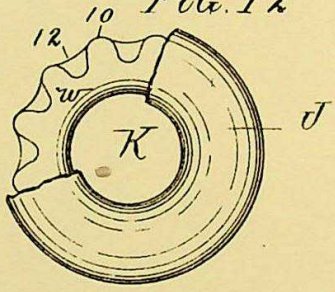


FIG 13

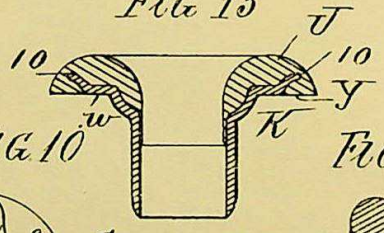


FIG 10

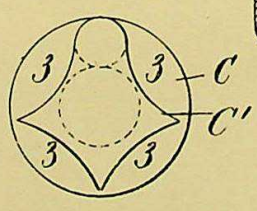


FIG 11

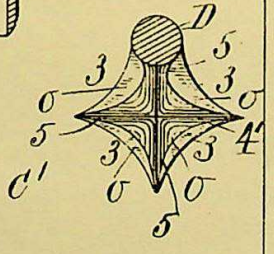


FIG 8

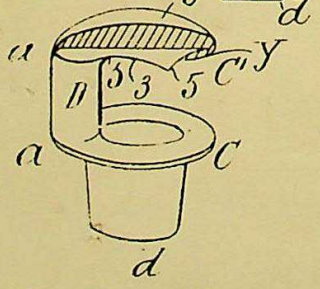
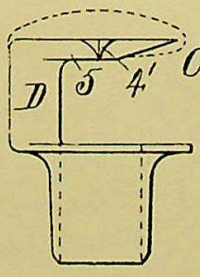


FIG. 9



[This Drawing is a reproduction of the Original on a reduced scale.]

Malby & Sons, Photo-Litho.

AMENDED SPECIFICATION.

Reprinted as amended in accordance with the decision of the Chief Examiner dated the 27th day of September 1905.

(The amendments are shown in erased and italic type). Duplicate.

N° 16,399* A.D. 1894

Date of Application, 28th Aug., 1894—Accepted, 2nd Feb., 1895

COMPLETE SPECIFICATION (AMENDED).

"Improvements in the Manufacture of Lacing Studs and in Covering the Heads of said Studs, and Analogous Articles with Plastic Materials."

We, FRANK BUR MANVILLE of No. 166, Grove Street, Waterbury, County of New Haven and State of Connecticut, Mechanical Engineer, and ARTHUR MATHISON of No. 161 Florida Street, Springfield, County of Hampden and State of Massachusetts, Manufacturer, both in the United States of America, do hereby declare the nature of this invention and in what manner the same is to be performed to be particularly described and ascertained in and by the following statement.

Our invention relates to an improvement in lacing studs and in the method of making the same, and in securing plastic material onto the heads of said studs and analogous objects, one object being to produce a lacing stud from a single piece of metal and of such form and construction that the metal will be so disposed as to impart great strength and durability to the finished article; a further object being to produce a cheap and efficient method for the manufacture of said improved lacing stud, whereby the head of a stud is peculiarly adapted to receive and permanently hold said plastic material.

In the accompanying drawing, Figures, 1, 2, 3, 4 and 5 represent a piece of wire, and the several forms given thereto successively previous to bending that represented in Figure 5 to make one form of the completed lacing stud illustrated in Figure 6.

Figures 7, 8, 9, 10 and 11 illustrate a lacing stud similar to Figure 6 but having the head thereof specially formed to receive and hold thereon a covering of plastic material.

Figures 12 and 13 illustrate eyelets having a head or rim, the border of which is adapted to receive and hold a covering of plastic material substantially the same as said material is held by the head of the lacing stud illustrated in Figure 7.

In Figure 1, A represents a short piece of wire preferably steel wire though it may be brass or any other metal. This blank is placed in any suitable heading machine, and its opposite ends are upset forming thereon the spherical heads B B, as represented in Figure 2. The blank is then flattened in a suitable machine to the form illustrated in side elevation in Figure 3 and plan view in Figure 4. By reference to Figure 3 it will be observed that the round ends are flattened to form discs C C^1 as represented in Figure 4, while the middle portion or shank D is rounded as at *a a* at which points the ends of the shank merge into the discs C C^1, the body of the

[*Price 8d.*]

shank being left cylindrical in cross section although if desired it may be slightly flattened. In the process of flattening or if desired by a separate process, the disc C^1 is not only flattened but is also made slightly convex externally, giving to its outer surface *b* and to its edge *c*, a smooth and finished appearance. From the other disc C is punched out an eyelet *d* of any desired length and diameter as shown in Figure 5. Or, when the head is to be covered with a plastic material, as shown in Figures 6, 7, 8 and 9, said head, C^1, may be made flat on its outer side as shown in top plan view in Figure 10, with curves, 3, in the border and having the right-angularly arranged ribs projecting on its under side whereby are formed pockets or receptacles in each of the four spaces, *o*, between the extremities of said ribs, the latter being triangular in cross section as shown at 4^1, Figure 9, the base of the triangle being uppermost. This latter named head construction is particularly strong owing to the junction of one end of the rib, 5, with that part of the stud at the junction of one shank D, and head C.

Another form which may be given to said stud-head, when it is to be covered as aforesaid, is illustrated in Figure 7, wherein the head is made with elevations, 10, and depressions, 12. The said pockets, or receptacles for the said plastic covering of the head at *o*, Figure 11, perform the same office as to the elevations and depressions, 10 and 12, Figure 7, *viz.*, to receive therein and especially under the head, sufficient of said plastic material (as at *y*, Figures 7 and 8,) to anchor it firmly to the head.

The depressions, 12, Figure 7, and the edges of the ribs, 4, Figures 8, 9, and 11, constitutes parts of the under side of the stud-head which rest solidly on a die while the plastic material is pressed thereon, and therefore said material cannot be ruptured. The discs C, C^1 are then bent by any suitable machine so as to stand at right angles to the shank D, which process completes the article, as illustrated in Figure 6, excepting of course, it may be afterward polished, plated or japanned, or shaped to be covered as described, with plastic material, J. When the discs are bent at right angles to the shank D, it will be observed that the rounded portions *a*, *a* not only allow of such bending without cracking or distorting the metal at the bends, owing to the fact that the thickness of the metal is gradually reduced at the rounded portions so as to facilitate the operation of bending, but such rounded ends of the shank also result in imparting a smooth and finished contour to the finished article.

The lacing stud illustrated in Figure 6 is provided with a thick and strong shank D, of cylindrical form in cross section, which firmly unites discs C, C^1, and retains the latter against being bent out of place, and being formed with a smooth and rounded surface it will not cut or unduly wear the lacing as it is drawn snugly around it in lacing a shoe. By our improved process, there is no waste metal in the manufacture of the article, the blank being manufactured in such a manner that by the successive operations hereinbefore described, the metal comprising a short piece of wire is caused to assume the form of a completed lacing stud. The article so formed is much stronger, particularly with the rib thereon as at 5, Figure 11, and more highly finished than one in which the parts are turned in a lathe, because the successive operations of heading and flattening, operate to consolidate the metal and render it compact and strong, and to give its surface a hard and finished appearance, and furthermore by our improved process we are enabled to make lacing studs of steel, which metal is preferable to brass because japan or other similar covering will adhere more closely thereto, and even though it may after a time be rubbed or worn off, it will not disfigure the article to the extent that it does when made of brass.

As it is evident that slight changes in or variations from the process and the features of form and construction of the lacing stud, herein shown and described, may be resorted to without involving a departure from our invention, we would have it understood that we do not restrict ourselves to the precise steps in the process, form, and construction, described and shown. The eyelet, K, illustrated in Figures 12 and 13, is of the ordinary construction excepting as to the head, *w*, thereof. The head of said eyelet is constructed with the elevations and depressions,

10 and 12, extending outwardly from the center to the periphery thereof, in the form and manner also further illustrated in Figure 7, on the head of the stud there shown, and the plastic material, J, is applied, anchored, and secured thereon, as above described. The lacing studs and eyelets herein described are adapted for use on shoes or other objects of wearing apparel. The plastic material applied thereto is preferably that having pyroxylene for its base, and it is given any desirable color, so that the color of the studs and eyelets may conform to that of the material or article on which they are secured. The plastic material applied to the heads of studs and eyelets having the conformations described, *and filling the recesses under the elevated portions of the metal* is so firmly fixed thereon that it is not disturbed by wear, and burning, only, will separate it from the heads.

Having now particularly described and ascertained the nature of our said invention and in what manner the same is to be performed, we declare that what we claim is :—

~~1. A process for manufacturing lacing studs, consisting in upsetting the ends of a blank and forming enlarged heads thereon, then flattening the heads, and punching an eyelet from one of the flattened discs, and bending such discs at right angles to the shank, substantially as set forth.~~

~~2. A process for manufacturing lacing studs, comprising the upsetting of the ends of a wire blank and forming heads thereon, flattening the heads, and rounding the ends of the shank where they connect with the discs, substantially as set forth.~~

1 3. The process of manufacturing lacing studs consisting in forming enlarged heads on the opposite ends of a blank, flattening such heads, punching an eyelet from one of the flattened discs and bending the discs at right angles to the shank, substantially as set forth.

~~4. A lacing stud having a head and an eyelet bearing base, the said head and base being integrally united by a solid cylindrical shank, substantially as set forth.~~

2 5. A lacing stud *constructed as aforesaid* having a rib on the under side of the head thereof, extending to the junction of said head and the shank of the stud, whereby the union of said head and shank is made more rigid.

3 6. A lacing stud *constructed as aforesaid* having projecting, right angularly arranged ribs on the underside of its head, whereby the head is made more rigid, and elevations and depressions are formed at the border of the head, combined with a plastic covering on the head engaging the border thereof substantially as described.

4 7. An eyelet or stud having a metallic head with elevations and depressions extending outward from near the center to the periphery of said metallic head, and a plastic cover extending over said metallic head and outside the periphery thereof, and filling the recesses under the elevated portions of the metal, the depressions in the metal under the head being exposed, substantially as described. *and illustrated.*

Dated this 10th day of August 1894.

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Agents for the Applicants.

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